

NOTES ON TYPES OF SPHAEROCERIDAE BY FALLÉN,
STENHAMMAR, AND ZETTERSTEDT, WITH LECTOTYPE
OF COPROMYZA EQUINA (FALL.) (DIPTERA)¹

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In the early nineteenth century the most significant contributions were made to the taxonomy of Sphaeroceridae by three Scandinavian entomologists, C. F. Fallén (1764-1830), C. Stenhammar (1783-1860), and J. W. Zetterstedt (1785-1874). Horn and Kahle (1935-37) reported that the material on which the work of Fallén (1820-26) was based was found in the Diptera collection of the Naturhistoriska riksmuseum, Stockholm, that used by Stenhammar (1855) in the Diptera collection of the Zoological Institute, Uppsala, and that of Zetterstedt (1840-60) in the collection of the Zoological Institute, Lund, Sweden.

In 1967 the author had visited those institutions known to have collections of Fallén, Stenhammar, and Zetterstedt, for examination of type specimens. The Fallén Collection is found in the Naturhistoriska riksmuseum, Stockholm, but few specimens are also found in the Diptera Collection at Lund. The major portion of the Stenhammar material is located in the Zoological Institute, Uppsala, but some specimens of the Stenhammar material are also found in the collections at Lund and Stockholm. The Diptera Collection at Lund includes Zetterstedt's material which contains some specimens determined by Fallén and Stenhammar.

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The type series of sphaerocerid species by Fallén, Stenhammar, and Zetterstedt were easily located and identified by their handwritten labels and placement of specimens in the collection. The collections have been kept as they were at the time of the author in the early nineteenth century. Technical assistance of Dr. Andersson at Lund, Dr. Hedström at Uppsala, and Dr. Persson at Stockholm was invaluable in locating the type specimens.

Morphological terminology of Kim and Cook (1966), a standardized mensuration system for the Sphaeroceridae devised by Kim (1968), and terminology of simple symmetrical plane shapes devised by Systematics Association (1962) are followed in the description.

In this paper the condition and status of the type specimens of the sphaerocerid species described by Fallén (1820-26), Stenhammar (1855), and Zetterstedt (1840-60) is discussed. Lectotype and paralectotypes are designated for a common Holarctic species, *Copromyza equina* Fallén, with a full redescription.

I am deeply indebted to Dr. Hugo Andersson, Zoological Institute, Lund; Dr. Lars Hedström, Zoological Institute, Uppsala; and Dr. Per Inge Persson, Naturhistoriska riksmuseum, Stockholm, Sweden for the generous loan of syntype materials, and for their help and hospitality while I was visiting the respective institutions.

TYPES OF SPECIES IN "DIPTERA SUECIAE" BY FALLÉN (1820-26)

Fallén (1820) listed seven species of "*Copromyza*" in which five were new species: *C. equina*, *C. pallifrons*, *C. pusilla*, *C. limosa*, and *C. fenestralis*, n. spp. Fallén (1826) added another new species, *C. fontinalis* to the group.

The major part of the material which was studied by Fallén is located in the Diptera Collection of the Naturhistoriska riksmuseum, Stockholm, but several specimens are also found in the collection at Lund.

The type specimens of the Sphaeroceridae are found in Box 33.

Fallén (1820):

2. *equina* Fall. = *Copromyza equina* Fallén: Six syntypes (one male and four females); one male is designated as the lectotype.

Var. α . One male and one female is much smaller species, and are not *C. equina*.

Var. β . Two females are not *C. equina*.

4. *pallifrons* Fall. = Identity uncertain: Two syntypes (one male and one female) are in poor condition; the male specimen has no legs and abdomen, and the female has no head.

5. *pusilla* Fall. = *Ischiolepta pusilla* (Fallén): Four syntypes (all females) are in good condition. Lectotype and paralectotypes were designated by the author in 1963. This information will be published in the subsequent revision of *Ischiolepta*.

6. *limosa* Fall. = *Leptocera limosa* (Fallén): Four syntypes (one male and three females) are in good condition. A female is designated as the lectotype, and one male and one female are designated as paralectotypes. A specimen with Fallén's handwritten label "*C. limosa* ♂" is a female of *L. lutosa* (Stenhammar). One male specimen with a handwritten label and small red square found in the collection at Lund may also be a syntype.

7. *fenestralis* Fall. = *Leptocera fenestralis* (Fallén): Eight specimens are associated with this name; one specimen with "♂" label has no abdomen, one specimen with "*C. fenestralis* ♀" label is a male and is a different species, and next to this male is a female specimen. The Stenhammar Collection (drawer S23 (II)) at Uppsala contains three specimens of which one with label may be a syntype.

Fallén (1826):

6-7. *fontinalis* Fall. = *Leptocera fontinalis* (Fallén): Two female syntypes with handwritten label "*fontinalis* Fall. ♀" and three specimens with handwritten label "*Copromyza umbricata* ♂ ♀" are located at Stockholm. There is another specimen with a handwritten label "*L. fontinalis* ♂ ♀ 4 Ex" in the Wallengren Collection at Lund which may also be a syntype. The name "*Copromyza umbricata*" has never been published, and the specimens with this label are definitely *L. fontinalis*. The female syntype with a label "*fontinalis* Fall. ♀" is designated as the lectotype of this species, and one female and three male specimens as paralectotypes.

The general Diptera Collection of the Naturhistoriska riksmuseum at Stockholm also includes the Boheman and some *Zetterstedt* material. One male and one female of *C. costalis* Zett. in this collection which are from Stenhammar may likely be syntypes. Five specimens of *Limosina rufilabris* Stenh. may also be syntypes.

TYPES OF SPECIES IN "SKANDINAVIAE COPROMYZINAE" BY STENHAMMAR (1855)

The major part of the collection on which Stenhammar (1855) based his monograph is located in the collection at Uppsala, and the minor part of the collection is also found at Lund. The specimens of the Sphaeroceridae are scattered in several drawers of the Stenhammar cabinets [S4 (B4) (I), S23 (II), S11-12 (32) (III), S2-1 (12) (IV), and S2-20 (V)]. In the drawer S4 (B4) (I) there are three

irregular rows of specimens labelled "Boheman", "Stenhammar", and "Holmgren". In the "Boheman" row there is no specimen, but only a label "*flavitarsis* n. sp." (= "*signata*?") is found. Nine specimens are found in the "Stenhammar" row; six specimens are labelled "*fuscata* n. sp." a name which has never been published. The "Holmgren" row contains a single male of *vitripennis* Meigen.

2. COPROMYZA Fallén. 9. *C. pallipes* Stenh. n. sp.: No syntypes are found.

3. LIMOSINA Macquart. 3. *L. curtiventris* Stenh. n. sp., 4. *L. verticella* Stenh. n. sp., 5. *L. nitens* Stenh. n. sp., 6. *L. aeniventris* Stenh. n. sp., and 8. *L. anceps* Stenh. n. sp.: No syntypes are found.

9. *L. breviceps* Stenh. n. sp.: Fifteen syntypes are found in the drawer S23 (II), one of which has a golden square label. An additional syntype is also found in the Zetterstedt Collection at Lund.

12. *L. lutosa* Stenh. n. sp.: Eight syntypes are located in the drawer S23 (II). An additional male is found in the Wallengren Collection at Lund. Seven specimens (six males and one female) are available for type designation from Uppsala, of which one male is misidentified and is in fact *L. limosa* (Fallén). One male is designated as the lectotype, and four males and one female as paralectotypes.

14. *L. septentrionalis* Stenh. n. sp.: Only one syntype with label is found in this collection, and one male in the "Diptera Scandinaviae" Collection at Lund.

15. *L. piligera* Stenh. n. sp.: No type specimen is found.

17. *L. opacula* Stenh. n. sp.: Ten syntypes with labels are found in the drawer S23 (II). An additional specimen is located in the Wallengren Collection at Lund.

18. *L. oelandica* Stenh. n. sp.: One specimen with the label is found in the Wallengren Collection at Lund.

19. *L. brachystoma* Stenh. n.sp.: No type specimen is located.

20. *L. ferruginata* Stenh. n. sp.: Eight syntypes are found in the drawer S23 (II), and two additional syntypes are also found, one in the Wallengren Collection and the other in the Zetterstedt Collection at Lund. Four specimens are available for study. One female syntype is designated as the lectotype, and one male and two female syntypes as paralectotypes.

21. *L. coxata* Stenh. n. sp., 22. *L. diadema* Stenh. n. sp., and 24. *L. bifrons* Stenh. n. sp.: No type are located.

27. *L. curvinerv's* Stenh. n. sp.: No syntype is located.

29. *L. rufilabris* Stenh. n. sp.: Seven specimens are found in the drawer S23 (II); two specimens with "*rufilabris* Stenh." labels, one specimen with "Sc.", "Bhn.", "Villn." labels, and the other with "Gtbl." label. There are five specimens, considered as syntypes, in the Collection at Stockholm, and one syntype at Lund.

33. *L. litoralis* Stenh. n. sp.: No type specimen is located.

36. *L. obtusipennis* Stenh. n. sp.: No syntype is located.

37. *L. parvula* Stenh. n. sp.: Two syntypes are located in the drawer S23 (II).

The Stenhammar Collection also includes syntypes of the species described by Zetterstedt and specimens with unpublished names.

2-8. *C. tibialis* Zett.: Two specimens (male and female) found in the drawer S4 (B4) (I) bearing labels indicating that they may be syntypes.

2-10. *C. sordida* Zett. Ten specimens with labels found in the drawer S4 (B4) (I) may be syntypes; there is a single male in the "Diptera Scandinaviae" Collection at Lund.

3-11. *L. limosa* Fall.: There are 16 specimens in the drawer S23 (II) in which two specimens with "15" and "115" labels which may be part of the syntype series.

Nomen dubium or unpublished names:

C. fuscata Stenh. n. sp., six specimens in the drawer S4 (B4) (I).

L. orthoneura, Götheborg, one specimen in the drawer S23 (II) (P. 374).

L. frountata Stenh., seven specimens in the drawer S23 (II).

L. flaviceps Stenh., four syntypes with labels are found in the drawer S11, 12 (32) (III).

TYPES OF SPHAEROCERID SPECIES DESCRIBED BY ZETTERSTEDT (1840-60)

The Zoological Institute at Lund holds the Zetterstedt Collection. There are six major Diptera Collections studied by Zetterstedt.

1. *The "Insecta Lapponica" Collection*: This collection was rearranged by Zetterstedt after "Insecta Lapponica" (1840) was published (personal communication, Andersson, 1968). Several species (indicated with asterisks) in the following list were listed in Zetterstedt (1840).

121. *Copromyza* Fall. (with green label):

**C. borealis* Zett. n. sp.: This species was first described in the "Diptera Scandinaviae" (1847). There are two males of which one specimen from Tomensi by Frigelins has been designated as lectotype by Hackman in 1957.

**C. fuscipennis*: One male from Umna.

3. *C. pusilla* Fall.-*Ischiolepta nitida* (Duda): One specimen.

4. *C. coronata* Zett. n. sp.: Single female specimen from Naestunsjo is considered the type. *C. coronata* Zett. is a synonym of *Ischiolepta crenata* (Meigen).

8. *C. pygmaea* Zett. n. sp.: Two males of which one is from Stensele and three females are located. One female with light green rectangular tag is not a syntype.

2. *The "Diptera Scandinaviae" Collection*: This collection also con-

*Indicates species listed in Zetterstedt (1840), see text.

tains specimens determined and worked on by Stenhammar, Fallén, and Staeger. The specimens from Stenhammar bear the label "4", those from Fallén are labelled "Mus Fall." or "F", and the specimens from Staeger are labelled "Staeger".

177. *Copromyza* Fall:

4. *C. geniculata* Macq.: Six males and six females (from Staeger).

5. *C. borealis* Zett.: One male from Areskutam. The male from Tornensi, by Frigelins, was designated as the lectotype of *C. borealis* by Hackman in 1957, and is placed in the "Insecta Lapponica" Collection.

6. *C. fuscipennis* Staeger: One male with a "umbripennis Staeg" label and one female.

7. *C. tibialis* Zett. n. sp.: No specimen is found in this collection. There are two specimens in the Boheman Collection at Stockholm.

8. *C. costalis* Zett. n. sp.: No type specimen is found; one female specimen is from Smol. No syntype is located at Copenhagen, although Zetterstedt mentions of the Staeger's material. There are one male and one female in the Diptera Collection at Stockholm.

9. *C. sordida* Zett. n. sp.; A single male with a label "*C. nigritella* an var. sordid?" which is mentioned in p. 2484; ten specimens with labels found in the Stenhammar Collection may also by syntypes.

°*C. nigritella*: Unpublished name, one male.

14. *C. coronata* Zett.: No specimen is found in this collection; the type is located in the "Insecta Lapponica" Collection.

15. *C. crenata* Zett. n. sp.: No specimen is found in this collection. There is a female syntype in the "Göteborg" Collection which is in fact *Ischiolepta crenata* (Fall.) There are few specimens in the Roth Collection which are *Ischiolepta nitida* (Duda).

178. *Limosina* Macq.:

°*L. lutosa* Stenh.: Two males and one female are found; one specimen with the label "1" is from Stenhammar, and may be a syntype.

4. *L. pusio* Zett. n. sp.: A single female syntype is found in this collection, and the male syntype is in the "Diptera Exotica" Collection.

°*L. septentrionalis* Stenh.: A single male is a part of the syntype series in the Stenhammar Collection.

°*L. fuscipennis*: One female from Stenhammar is found; its identity is uncertain.

°*L. ferruginata* Stenh.: One male from Stenhammar is found.

°*L. fontata* Stenh.: One male from Stenhammar is found

°*L. opacula* Stenh.: One male from Stenhammar is found.

6. *L. pullula* Zett. n. sp.: One male and one female are found in this collection, but they are not syntypes. Two syntypes from Paradislyckan are located among the *Piophilila* material.

7. *L. acutangula* Zett.: One male from Paradislyckan.

9. *L. flaviceps* Zett. n. sp.: No specimen is found. There are syntypes in the Stenhammar Collection at Uppsala.

10. *L. setulosa* Zett. n. sp.: A single female syntype from Scania is found.

°*L. longicosta* (uncertain name): One male and one female are found.

11. *L. lugubrina* Zett. n. sp.: One female syntype from Gottlandica is found, and two additional females are also found in the "Göteborg" Collection. Next to this species there are two specimens with label "*L. subtilissima* Stenh. ♂" which is apparently an unpublished name.

14. *L. vitripennis* Zett. n. sp.: No type is found in this collection, but two syntypes (male and female) from Esperöd are located in the "Göteborg" Collection.

15. *L. minutissima* Zett., n. sp.: One male syntype from Lund is located in this collection, and 10 other specimens with small colored rectangles are also found, 15 in the "Göteborg" Collection.

3. *The "Göteborg" Collection*: This collection contains those species cited in Zetterstedt's "Diptera Scandinaviae" (1852, 1855, 1860). A part of this material is also found in the Roth and Wallengren Collections.

°*Copromyza denticulata* Meigen = *Ischiolepta paracrenata* (Duda): One male and one female.

°*Copromyza crenata* Zett. = *Ischiolepta pusilla* (Fallén): Single female syntype is found.

°*Copromyza pusilla* Fall.: Two males and three females of which one is *Ischiolepta nitida* (Duda).

°*Limosina stenhammari* Zett. n. sp. 1860: A single male syntype from Illstorp collected by Roth. There are two additional syntypes in the Roth Collection.

°*Limosina lugubrina* Zett. n. sp. 1847: Two female syntypes are found in addition to a single syntype found in the "Diptera Scandinaviae" Collection; one from Elmhult, and the other from Gottlandica.

°*Limosina vitripennis* Zett. n. sp. 1847: One male and one female syntype from Esperöd are located; no type specimen is found in the "Diptera Scandinaviae" Collection.

°*L. minutissima* Zett. n. sp. 1847: Three male syntypes from Lund and Ostrogothia are found in addition to seven other specimens which are not syntypes.

4. *The Roth Collection*: This collection is arranged according to Zetterstedt (1860).

°*Copromyza pilosiventris* Zett. n. sp. 1860: No specimen is in this collection.

°*Copromyza denticulata* Meig = *Sphaerocera monilis* Haliday: One male.

°*Copromyza coronata* Zett. = *Ischiolepta paracrenata* (Duda): One male.

°*Copromyza crenata* Zett. = *Ischiolepta nitida* (Duda): One male.

°*Copromyza pedestris* Meigen: No specimen is located.

°*Limosina tarsata* Zett., n. sp. 1855: No type specimen is found in this collection; one male type is located in the Wallengren Collection.

°*Limosina stenhammare* Zett., n. sp. 1860: One male and one syntype from

Illstorp collected by Roth are found in addition to one syntype in the "Göteborg" Collection.

5. The Wallengren Collection: This collection contains some representatives from materials of Zetterstedt, Stenhammar, and Fallén.

**Limosina fontinalis* Fall.: Two specimens; one with an old label may be a syntype.

**Limosina lutosa* Stenh.: Thirteen specimens are found in this collection.

**Limosina limosa* Fall.: Twenty specimens; one with an old label may be a syntype.

**Limosina tarsata* Zett., n. sp. 1855: Two specimens; one specimen is a syntype.

**Limosina oelandica* Stenh.: One syntype is found.

**Limosina ferruginata* Stenh.: One syntype is found.

**Limosina rufilabris* Stenh.: Ten specimens including one syntype are found.

6. The "Diptera Exotica" Collection:

**Limosina pusio* Zett., n. sp. 1847: One male syntype in addition to one syntype are found in the "Diptera Scandinaviae" Collection.

**Limosina* sp. ign.: One specimen with white halter from Germany. Collected by Dahlbom.

Copromyza equina Fallén

(Figs. 1-12)

Copromyza equina Fallén 1820, Diptera Sueciae Heteromyzides 2: 6; Zetterstedt 1840: 769; Westwood 1840: 144; Zetterstedt 1847: 2477, 2478; Stenhammar 1855: 340; Zetterstedt 1855: 4794; Zetterstedt 1860: 6391; Seguy 1934: 450; Goddard 1938: 252; Hackman 1960: 104; VanSchuytbroeck 1962: 6; Richards 1965: 719; Andersson 1967: 113.

Borborus equinus (Fallén), Meigen 1830: 201; Curtis 1832: 469; Macquart 1835: 566; Haliday 1836: 323; Gimmerthal 1842: 658; Walker 1849: 1129; Walker 1853: 175; Schiner 1864: 232; Osten-Sacken 1878: 212; Rondani 1880: 9, 13; Hansen 1881: 268; Becher 1882: 152; Bezzi 1891: 34; Strobl 1893: 148; Howard 1900: 593; Strobl 1900: 68; Webster 1900: 213; Aldrich 1905: 576; Becker 1905: 24; Tucker, 1907: 103; Collin 1914: 238; Becker 1916: 127; Knoll 1926: 416.

Copromyza (*Copromyza*) *equina* Fallén, Richards 1930: 314; Smart 1936: 93; Hardy 1952: 461; Richards 1952: 429; Hackman 1965: 46; Tenorio 1968: 178.

Cypsela equina (Fallén), Petrova 1968: 56.

Coprophila equina Fallén, Mohr 1943: 289.

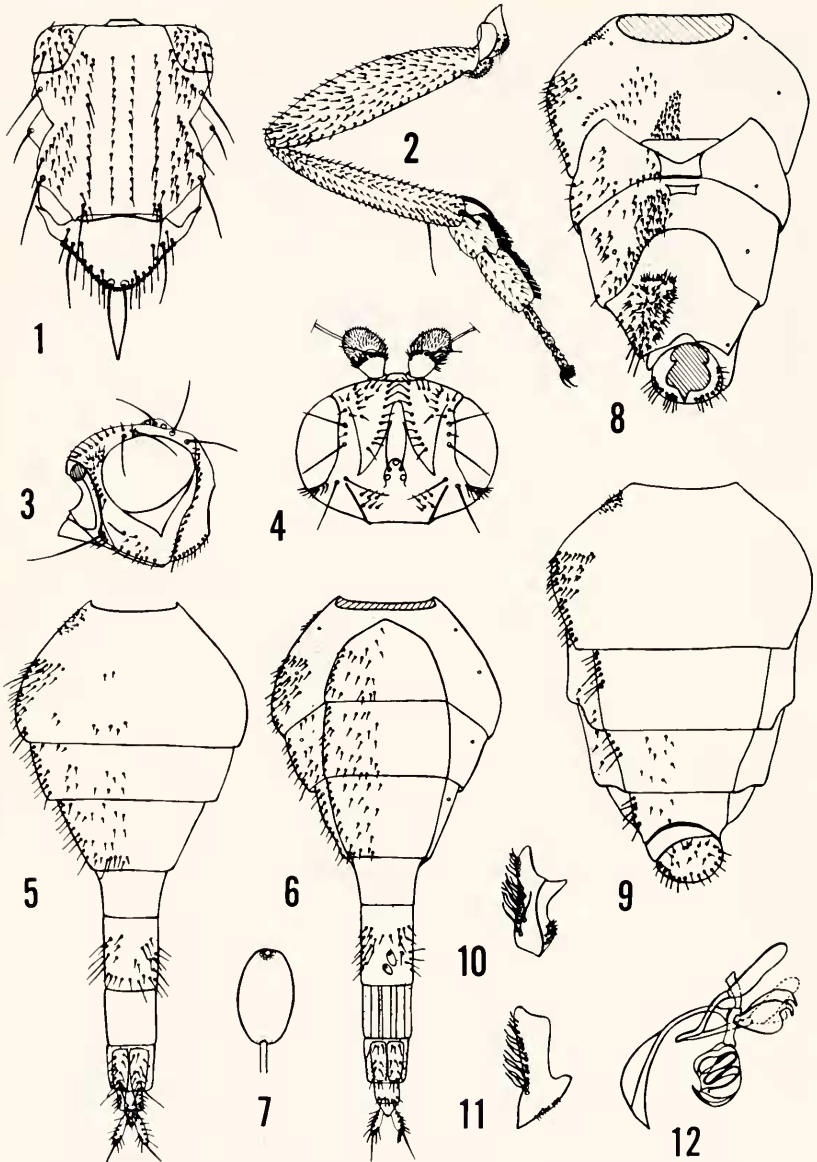
Trichiaspis equina (Fallén), Duda 1923: 93.

Borborus (*Borborus*) *equinus* (Fallén), Spuler 1925: 13.

- Borborus (Copromyza) equina* (Fallén), Van Schuytbroeck 1943: 5.
Copromyza (Trichiaspis) equina Fallén, Duda 1938: 61.
Mycetia vulgaris Robineau-Desvoidy 1830: 806, 4 (*vide* Macquart 1835: 566)
Sphaerocera communis Robineau-Desvoidy 1830: 807, 1 (*vide* Walker 1849: 1129)
 (?) *Sphaerocera coprivora* Robineau-Desvoidy 1830: 807, 3 (*vide* Walker 1849: 1129)
Sphaerocera fuliginosa Robineau-Desvoidy 1830: 807, 2 (*vide* Walker 1849: 1129)
Borborus incanus Meigen 1830: 206 (*vide* Duda 1923: 93)
Borborus rufipes Meigen 1830: 205 (*vide* Duda 1923: 93)
Borborus pallipes Meigen 1830: 204 (*vide* Duda 1923: 93)
Borborus luridus Meigen 1830: 203 (*vide* Duda 1923: 93)
Borborus longipes Macquart 1935: 508 (*vide* Duda 1938: 61)
 (non) *Copromyza equina* var. α Fallén 1820: 6.
 (non) *Copromyza equina* var. β Fallén 1820: 6.

TYPE-DATA. *C. equina* Fallén is a very common and widely distributed fly. This species was originally described by Fallén (1820), in "Diptera Sueciae Heteromyzides." The type specimens are deposited in the Naturhistoriska riksmuseum, Stockholm, Sweden (Horn and Kahle, 1935-37). There are six specimens of *C. equina* Fallén, one male and two females of *C. equina* var. α , and two females of *C. equina* var. β in the Fallén Collection. With the kindness of Dr. Karl-Johan Hedquist and Dr. Per Inge Persson of the Naturhistoriska riksmuseum, Stockholm, Sweden, I have examined six specimens, of which two specimens have Fallén's handwritten labels "*C. equina*", from the Fallén Collection for *C. equina* Fallén. Lectotype male (Riksmuseum, Stockholm No. 63-308) and five paralectotypes (four females and one specimen without abdomen) are deposited in the Fallén Collection, Naturhistoriska riksmuseum, Stockholm, Sweden.

DESCRIPTION—*Male*: Total body length 6.03 mm; blackish brown, sub-shiny, with dense yellow pollinose. *Head* (Figs. 3-4) blackish brown becoming yellowish anteriorly forming a W-shaped area which is subshiny and bearing many short setae; frons flattened; head length 0.70 mm; frons width 0.50 mm; frontal triangle well defined, orbits slightly produced, with about 10 pairs of short interfrontal setae; 3 moderate orbital setae, 2 anterior setae directed outward and the posterior setae directed inward; ocellar triangle small, triangular and convex, with 3 large yellow ocelli and 1 pair of long ocellar setae; compound eyes large, elliptical and strongly convex; vertex dark brown, flattened, subshiny, with 1 long inner vertical seta curved backward, exterior vertical seta and outer occipital seta reduced to undistinguishable microsetae, with 1 row of minute postorbitals; gena rusty yellow,



FIGS. 1-12. *Copromyza equina* Fallén; Figs. 1-4, Figs. 8-12, male lectotype; Figs. 5-7, female paralectotype; Fig. 1, dorsal view of thorax; Fig. 2, right hind leg; Fig. 3, lateral view of head; Fig. 4, dorsal view of head; Fig. 5, dorsal view of abdomen; Fig. 6, ventral view of abdomen; Fig. 7, spermatheca; Fig. 8, ventral view of abdomen; Fig. 9, dorsal view of abdomen; Fig. 10, posterior view of valvula lateralis; Fig. 11, lateral view of valvula lateralis; Fig. 12, genitalia.

appearing silky; supragena small, triangular, dark brown and bare; infragena large, rusty yellow and pollinose; subgena narrow; subgenal suture marked by black line, with 11 genal setae, 6 arranged in row along suture and 4 above, the anterior seta longer and curved upward. Antennae dark brown, 0.22 mm long; basal segment yellowish brown, with few minute setae; second segment dark brown, with a row of apical setae; third segment just a little wider than long and pubescent; arista 0.73 mm long, almost bare. Facial cavity very deep, without keel, yellowish brown and subshiny; epistoma poorly developed, clypeus large, yellow; facial carina small; facial ridge distinct, densely pollinose, with 1 long (0.38 mm) vibrissa curved inward and 2 short pseudovibrissae. *Thorax* (Fig. 1) blackish brown, subshiny, slightly wider than head; scutum length 1.00 mm, thorax width 1.13 mm; scutum more or less flattened, with 4 regular rows of slender setae, 2 Ac, and 2 Dc, with only 2 prescutellar Dc long; humeral callus large, strongly convex, with dense microsetae and 1 long (0.20 mm) humeral seta; on each side with 1 each moderate posthumeral, presutural, notopleural and supralar seta, 1 weak postalar; scutellum triangular, blackish brown, length 0.33 mm, width at base 0.58 mm, with 4 long marginal setae (anterior 0.30 mm, apical 0.45 mm). Pleura blackish brown, yellow pollinose; episternum I with dense short setae; prepisternum II with several minute sternopleural setae. *Legs* (Fig. 2) dark brown. Fore leg with large coxa and femur; femur darker brown than rest of leg, with a row of long ventral setae and a few long dorsal setae; tibia shorter than femur and slender. Middle leg more slender compared to other 2 legs; femur with a row of short anterior spiniform setae; tibia as long as femur but more slender, with 1 mid anterior spiniform seta and a ring of shorter subapical ones. Hind leg very long and strong; femur enlarged and long; tibia shorter but thickened distally, with 1 long dorsal subapical seta, 2 short anterior apical spiniform setae and 1 stout hooklike incurved apical ventral spur; basitarsus strongly incrassate with a short anterior apical spiniform seta; segment 2 also incrassate, about 1.5 times longer than basitarsus; segments 3-5 flattened dorsoventrally and yellowish. *Wing* length 3.45 mm, width 1.30 mm; membrane brown with yellowish tinge; veins dark brown; C setulose, darker brown than other veins, with 1 long basal seta, C reaching M_{1+2} ; R_{2+3} more or less parallel to C, bent slightly anteriorly reaching C at a point so that Cs_2 is almost 4 times as long as Cs_3 ; R_{4+5} straight to apex; last section of M_{1+2} parallel to R_{4+5} ; M_{3+4} hardly extending beyond the posterior crossvein but very near the margin; Cu_1 curves downward ending beyond the cubital crossvein but without reaching the margin; posterior crossvein almost twice as long as the anterior crossvein. *Wing measurements*: Discal cell length 1.48 mm; anterior basal cell 1.13 mm; posterior basal cell 0.50 mm; anal cell 0.48 mm; costal index 3.45; medial index 1.44. Halter with yellow pedicel and capitellum. *Abdomen* (Fig. 8-9) blackish brown, subshiny, length 2.00 mm, width 1.25 mm; basal syntergite (1T + 2T) about twice as long and much wider than 3T; preabdomen with 3 small sternites, 3S smallest, with very dense short setae on membranous areas around sternites. Postabdomen small, asymmetrical, with 6S lateroverted, 6T displaced right to left and pushed into body cavity appearing as a stripelike sclerite; 7S and 7T apparently absent; 8T small, convex bearing the membranous anal region; 9T modified into a

spatula-like lateral sclerite and 9S modified into its rod-shaped stalk; 10T triangular. *Genitalia* (Figs. 10-12): valvulae laterales elongate, 0.25 mm long, 0.08 mm wide, with its apex truncate when seen on posterior view and inverted anvil-shaped, when seen from lateral view, bearing stout wavy setae pointed upward along its outer margin; valvulae mediales present, triangular, with short wavy setae along its outer surface, gonites paired, rounded, with one dorsal tooth-like projection and a small hook-like structure at the apex; phallapodeme elongate, with enlarged distal half; basiphallus rod-shaped; distiphallus rounded and partly sclerotized.

Female: Total body length 4.50 mm. Head, thorax, legs, wings and preabdomen are as in the male unless mentioned otherwise. *Head* length 0.75 mm; frons width 0.55 mm; antenna 0.25 mm long; arista bare. *Thorax* with scutum length 1.13 mm; thorax width 1.25 mm; scutellum length 0.43 mm; scutellum width 0.70 mm. *Wing* length 3.83 mm; width 1.63 mm; costal index 3.46; medial index 1.33. *Wing* measurements: Discal cell length 1.60 mm; anterior basal cell 1.10 mm; posterior basal cell 0.53 mm; anal cell 0.50 mm; posterior crossvein 0.33 mm. *Abdomen* (Figs. 5-6) length 2.13 mm, width 1.70 mm; preabdomen with 3 large sternites; 1S rounded at anterior margin, 2S and 3S rectangular; postabdomen telescoped, long, slender and membranous; cerci length 0.13 mm; with many wavy setae, 2 on apex longer than others; 2 spermathecae (Fig. 7) distinct, elongate, about twice as long as wide, one spermatheca larger.

DISTRIBUTION.—World but mainly Holarctic region.

SPECIMENS EXAMINED.—More than 2,600 specimens were available for study from: every state in the United States; Alaska, Kodiak Island; all provinces of Canada; England, Sweden, Austria, Germany, and Japan.

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2.0171 Notes on types of Sphaeroceridae by Fallén, Stenhammar, and Zetterstedt, with lectotype of *Copromyza equina* (Fall.) (Diptera.)

ABSTRACT.—The condition and status of the type specimens of the sphaerocerid species described by Fallén (1820-26), Stenhammar (1855), and Zetterstedt (1840-60) is discussed. Lectotype and paralectotypes are designated for a common Holarctic species, *Copromyza equina* Fallén, with a full redescription.—*Ke Chung Kim, Frost Entomological Museum, Department of Entomology, Pennsylvania State University Park, PA 16802.*

Descriptors: Diptera; Sphaeroceridae; holotypes; lectotype of *Copromyza equina*.